WHAT IS CLAIMED IS:

1. A computer implemented method for selectively contacting microfluidic devices and arrayed materials, the method comprising:

(a) providing a microfluidic device handling system operably connected to at least one computer, wherein the microfluidic device handling system is capable of implementing relative movement of at least one microfluidic device having n capillary elements extending therefrom, of at least one array of materials having x material sites or at least one container, or of both, under instruction of the at least one computer;

(b) inputting one or more initial parameters for the at least one microfluidic device and the at least one array into the at least one computer, the at least one computer comprising at least one simple logic control program for selectively contacting at least one capillary element and material at at least one selected material site disposed in or on a surface of the at least one array; and,

(c) implementing the at least one simple logic control program to effect:

(i) moving the at least one microfluidic device relative to the at least one array, the at least one array relative to the at least one microfluidic device, or both, according to the one or more initial parameters, and,

(ii) contacting the at least one capillary element and the material at the at least one selected material site.

2. The method of claim 1, further comprising interchanging the at least one microfluidic device with at least one different microfluidic device, the at least one array with at least one different array, or both, wherein the at least one simple logic control program effects selective contacting of interchanged components.

3. The method of claim 1, wherein the at least one simple logic control program optimizes a course for selectively contacting the at least one capillary element and the material at the at least one selected material site.

4. The method of claim 1, wherein the one or more initial parameters comprise one or more of: an n-value, an x-value, a capillary element mask, an array

mask, a number of columns of material sites, a number of rows of material sites, a mask for each row of material sites, a selection of materials at material sites to be contacted, a quantity or volume of the material to be drawn from the at least one selected material site, or a deselection of materials at material sites not to be contacted.

5. The method of claim 1, wherein the at least one capillary element comprises a capillary channel disposed therethrough.

6. The method of claim 1, wherein n corresponds to at least about 1, 2, 4, 6, 8, 12, or more capillary elements.

7. The method of claim 1, wherein x corresponds to at least about 1, 10, 50, 96, 250, 384, 500, 1000, 1536, 5000, 10000, 100000, or more material sites.

8. The method of claim 1, wherein (ii) further comprises drawing a selected quantity or volume of the material into the at least one microfluidic device through the at least one capillary element.

9. The method of claim 1, wherein the at least one container comprises at least one recirculation/replenishing bath or trough.

10. The method of claim 1, wherein the at least one simple logic control program comprises:

at least one instruction set for causing the at least one computer to effect movement of the at least one microfluidic device to the at least one selected material site or to the at least one container, to effect movement of the at least one array or the at least one container relative to the at least one microfluidic device, or both;

at least one instruction set for causing the at least one computer to effect contact of the at least one capillary element and the material at the at least one selected material site or fluidic material in the at least one container; and,

at least one instruction set for causing the at least one computer to effect deselection of the at least one selected material site following (ii).

11. The method of claim 10, wherein the at least one simple logic control program further comprises at least one instruction set for causing the at least one computer to effect drawing of one or more selected quantities or volumes of the material from the at least one selected material site during (ii), to effect drawing of one or more selected volumes of fluidic material from the at least one container, or both.

12. The method of claims 10 or 11, wherein the at least one simple logic control program further comprises at least one instruction set for causing the at least one computer to vary or select a rate or a mode of moving or contacting the at least one capillary element and the material or fluidic material in the at least one container.

13. The method of claim 1, wherein the material comprises a first fluidic material.

14. The method of claim 13, wherein (b) further comprises inputting one or more initial parameters for the at least one container into the at least one computer, the at least one computer further comprising at least one simple logic control program for selectively contacting the at least one capillary element and a second fluidic material disposed in the at least one container.

15. The method of claim 14, wherein (ii) comprises dipping the at least one capillary element into the first fluidic material at the at least one selected material site.

16. The method of claim 15, wherein (c) further comprises:

(iii) moving the at least one microfluidic device relative to the at least one container, the at least one container relative to the at least one microfluidic device, or both, according to the one or more initial parameters or one or more updated parameters; and,

(iv) dipping the at least one capillary element into the second fluidic material, and moving the second fluidic material relative to the at least one capillary element or moving the at least one capillary element relative to the second fluidic material.

17. The method of claim 16, wherein (c) further comprises:

(v) moving the at least one microfluidic device relative to the at least one array, the at one array relative to the at least one microfluidic device, or both, according to the one or more initial parameters or the one or more updated parameters; and,

(vi) dipping the at least one capillary element into a third fluidic material at at least one other selected material site, wherein (iv) dissipates at least one drop of the first fluidic material adhering to at least one portion of the at least one capillary element into the second fluidic material, thereby reducing fluid carryover from (ii) to (vi).

18. The method of claim 16, wherein the second fluidic material is disposed in at least one other selected material site of the at least one array, or in a fluidic container distinct from the at least one array.

19. The method of claim 16, wherein (iv) further comprises moving both the at least one capillary element and the second fluid material simultaneously relative to one another.

20. The method of claim 16, comprising moving the second fluidic material in at least one fluid stream or in a fluid recirculation/replenishing bath or trough.

21. The method of claim 16, wherein the second fluid material comprises at least one solution selected from the group consisting of: a wash solution, a rinse solution, a buffer solution, a reagent solution, a sample solution, and a spacer solution.

22. The method of claim 16, wherein (ii) further comprises drawing at least a portion of the first fluidic material into the at least one capillary element.

23. The method of claim 16, wherein (iv) further comprises drawing at least a portion of the second fluidic material into the at least one capillary element.

24. The method of claim 23, wherein (iv) dissipates carried-over first fluidic material in the second fluidic material thereby reducing an amount of the carried-over first fluidic material drawn into the at least one capillary element.

25. The method of claim 1, wherein the at least one array comprises at least one microwell plate, substrate, or membrane.

26. The method of claim 25, wherein the x material sites correspond to x wells in the at least one microwell plate, or to x sample sites on the at least one substrate or membrane.

27. The method of claim 1, the method further comprising:

(iii) updating the one or more initial parameters; and, optionally:

(iv) repeating (i), (ii), and (iii) until each selected capillary element of the microfluidic device and materials at each selected material site are contacted.

28. The method of claim 27, wherein the at least one simple logic control program automatically directs each (i), (ii), and (iii).

29. The method of claim 27, wherein the at least one simple logic control program automatically updates the one or more initial parameters by deselecting material at each material site contacted by the at least one capillary element following each repeated cycle of (i) and (ii).

30. An integrated system, comprising:

at least one computer;

a microfluidic device handling system operably connected to the at least one computer, wherein the microfluidic device handling system is capable of implementing relative movement of at least one microfluidic device having n capillary elements extending therefrom, of at least one array of materials having x material sites or at least one container, or of both, under instruction of the at least one computer;

a computer readable medium operably connected to the at least one computer that stores at least one simple logic control program for selectively contacting at least one capillary element and a material at at least one selected material site disposed in or on a surface of the at least one array or a fluid in the at least one container, the at least one simple logic control program comprising:

at least one instruction set for causing the at least one computer to receive one or more inputted initial parameters;

at least one instruction set for causing the at least one computer to effect movement of the at least one microfluidic device to the at least one selected

material site or to the at least one container according to one or more inputted initial parameters or one or more updated parameters, to effect movement of the at least one array or the at least one container relative to the at least one microfluidic device according to one or more inputted initial parameters or one or more updated parameters, or both;

at least one instruction set for causing the at least one computer to effect contact of the at least one capillary element and the material or the fluid according to one or more inputted initial parameters or one or more updated parameters; and,

at least one instruction set for causing the at least one computer to effect deselection of the at least one selected material site following contact between the at least one capillary element and the material.

31. The integrated system of claim 30, wherein the at least one simple logic control program further comprises:

at least one instruction set for causing the at least one computer to vary or select a rate or a mode of moving or contacting the at least one capillary element and the material or the fluid, to vary or select a rate or a mode of moving the at least one array or the at least one container, or both;

at least one instruction set for causing the at least one computer to effect drawing of one or more selected quantities or volumes of the material from the at least one selected material site into the at least one microfluidic device through the at least one capillary element according to one or more inputted initial parameters or one or more updated parameters while the at least one capillary element and the material are in contact, to effect drawing of one or more selected quantities or volumes of the fluid from the at least one container into the at least one microfluidic device through the at least one capillary element according to one or more inputted initial parameters or one or more updated parameters while the at least one capillary element and the fluid are in contact, or both; or,

both.

32. The integrated system of claims 30 or 31, wherein the at least one simple logic control program further comprises at least one instruction set for causing the at least one computer to automatically update one or more inputted initial parameters or one or more other parameters.

33. The integrated system of claim 30, wherein the one or more inputted initial parameters or the one or more updated parameters comprise one or more of: an n-value, an x-value, a capillary element mask, an array mask, a number of columns of material sites, a number of rows of material sites, a mask for each row of material sites, a selection of materials at material sites to be contacted, a quantity or volume of the material to be drawn from the at least one selected material site, or a deselection of materials at material sites not to be contacted.

34. The integrated system of claim 30, wherein the computer readable medium comprises one or more of: a CD-ROM, a floppy disk, a tape, a flash memory device or component, a system memory device or component, a hard drive, or a data signal embodied in a carrier wave.

35. The integrated system of claim 30, wherein the at least one container comprises at least one recirculation/replenishing bath or trough.

36. The integrated system of claim 30, the microfluidic device handling system comprising:

a holder configured to receive the at least one microfluidic device;

a container sampling region proximal to the holder configured to receive the at least one array; and,

a controller which, during operation of the handling system, implements movement or interchange of the at least one microfluidic device, the array, or both, contact between the at least one capillary element and the material, and drawing of the material.

37. The integrated system of claim 36, wherein the at least one capillary element comprises a capillary channel disposed therethrough.

38. The integrated system of claim 36, wherein n corresponds to at least about 1, 2, 4, 6, 8, 12, or more capillary elements.

39. The integrated system of claim 36, wherein x corresponds to at least about 1, 10, 50, 96, 250, 384, 500, 1000, 1536, 5000, 10000, 100000, or more material sites.

40. The integrated system of claim 36, wherein the at least one array comprises at least one microwell plate, substrate, or membrane.

41. The integrated system of claim 40, wherein the x material sites correspond to x wells in the at least one microwell plate, or to x sample sites on the at least one substrate or membrane.

42. A computer program product comprising a computer readable medium having at least one simple logic control program stored thereon for causing a computer to selectively contact at least one capillary element of at least one microfluidic device having n capillary elements extending therefrom and material at at least one selected material site of at least one array of materials having x material sites or fluid in at least one container, the at least one simple control logic program comprising:

at least one instruction set for causing the at least one computer to receive one or more inputted initial parameters;

at least one instruction set for causing the at least one computer to effect movement of the at least one microfluidic device to the at least one selected material site or to the at least one container according to one or more inputted initial parameters or one or more updated parameters, to effect movement of the at least one array or the at least one container relative to the at least one microfluidic device according to one or more inputted initial parameters or one or more updated parameters, or both;

at least one instruction set for causing the at least one computer to effect contact of the at least one capillary element and the material or the fluid according to one or more inputted initial parameters or one or more updated parameters; and,

at least one instruction set for causing the at least one computer to effect deselection of the at least one selected material site following contact between the at least one capillary element and the material.

43. The computer program product of claim 42, wherein the at least one simple control logic program further comprises:

at least one instruction set for causing the at least one computer to vary or select a rate or a mode of moving or contacting the at least one capillary element and the material or the fluid, to vary or select a rate or a mode of moving the at least one array or the at least one container, or both;

at least one instruction set for causing the at least one computer to effect drawing of one or more selected quantities or volumes of the material from the at least one selected material site into the at least one microfluidic device through the at least one capillary element according to one or more inputted initial parameters or one or more updated parameters while the at least one capillary element and the material are in contact, to effect drawing of one or more selected quantities or volumes of the fluid from the at least one container into the at least one microfluidic device through the at least one capillary element according to one or more inputted initial parameters or one or more updated parameters while the at least one capillary element and the fluid are in contact, or both; or,

both.

44. The computer program product of claims 42 or 43, wherein the at least one simple control logic program further comprises at least one instruction set for causing the at least one computer to automatically update one or more inputted initial parameters or one or more other parameters.

45. The computer program product of claim 42, wherein the one or more inputted initial parameters or the one or more updated parameters comprise one or more of: an n-value, an x-value, a capillary element mask, an array mask, a number of columns of material sites, a number of rows of material sites, a mask for each row of material sites, a selection of materials at material sites to be contacted, a quantity or volume of the

material to be drawn from the at least one selected material site, or a deselection of materials at material sites not to be contacted.

46. The computer program product of claim 42, wherein the computer readable medium comprises one or more of: a CD-ROM, a floppy disk, a tape, a flash memory device or component, a system memory device or component, a hard drive, or a data signal embodied in a carrier wave.